

Tennessee Pollution Prevention Partnership Success Story

MAHLE

Driven by performance

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Machining Coolant Conservation

The Member

MAHLE, Inc. is a member of the German headquartered MAHLE Group, a leading manufacturer of pistons and other engine components. For over 80 years, MAHLE has numbered among the leading international manufacturers of high quality components for the automotive industry. Groundbreaking innovations have made MAHLE a reliable and successful partner to its customers.

In Morristown, MAHLE, Inc. serves leading automotive and diesel piston customers and is the leading producer of power cell modules in North America. MAHLE's approximately 1,175 employees are proud of their quality, reliability and delivery to their customers. MAHLE, Inc. is ISO-14001 and TS-16949 certified.

The Story

Tons of steel chips are machined from forgings in the production of MAHLE's high quality heavy duty diesel pistons, and the steel scrap is sold to a recycler. Steel chips with residual coolant are removed from the machining centers by conveyors and dumped into chip buggies, which are then dumped into compactor bins outside. The bins are transported by truck to the metal recycler. During this chip removal process approximately 1,000 gallons of coolant was carried over each day with the chips into the chip buggies. The coolant is drained from the compactor bins and must be cleaned for reuse. There is a potential that some coolant may get onto the ground and create a storm water impact. The Heavy Duty Diesel Piston Operations department worked with Operations Support and Technical Support personnel to reduce the coolant loss and the potential environmental effects.

The Success

A "coolant catcher" was designed by Steve Walker of Heavy Duty Diesel Piston Operations and Eric Stiner of Machine Repair, and a prototype proved to be

successful in eliminating the carryover of coolant into the chip buggies. The coolant returns directly to the machining process, almost eliminating all coolant carryover to the compactor bins.

Approximately 70 "coolant catchers" are now installed throughout the Heavy Duty Diesel machining area, resulting in significantly improved coolant utilization. A total of approximately 1,000 gallons of coolant are returned to the machines daily. This reduction in coolant loss also equates to a reduction in coolant management time and maintains coolant efficiency.



MAHLE, Inc. Coolant Coordinator Ronnie Ball (left) and Maintenance Engineer Eric Stiner check the performance of a "coolant catcher" recently installed on a Heavy Duty Diesel Machining Center chip conveyor.

The Pollution Prevented

The "coolant catchers" decrease the potential for used coolant to be transferred into the scrap metal collection bin and transportation system, and reduce the potential for stormwater contamination. Approximately 1,000 gallons of coolant are returned to the machines daily.

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